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## SUSTAINABLE DEVELOPMENT AND RISK ANALYSIS: Complementary Frameworks

**MARCELA ACUÑA-RIVERA, University of Surrey**

Sustainable development has been advocated since the 1992 UN Earth Summit in Rio de Janeiro (and arguably thirty years before with the publication of Rachel Carson's *Silent Spring* in 1962) as an essential shift in the policies of governments globally in order to reduce threats to both human beings and the environment: development should be reconceptualised if a better quality of life is to be achieved both for present and future generations.

The 'sustainable development' and 'risk analysis' research literatures are typically distinct with little shared discourse. Even though sustainable development is usually conceptualised within a larger framework than risk analysis, in this paper it is argued that sustainable development has to incorporate a risk perspective in order to achieve its goals, since risky societies are unsustainable and unsolved threats impose more risks to present and future generations. Likewise, risk analysis scientists and decision makers need to take into account the philosophy and precepts of sustainable development in order to understand more holistically the causes and consequences of environmental threats and risk behaviours. Sustainable development and risk analysis frameworks are reciprocally related and relevant (Table 1).

**Table 1. Comparison between the sustainable development and risk analysis approaches**

|                  | <b>Sustainable Development</b>                                                                                                                       | <b>Risk Analysis</b>                                                                                |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| <b>Aim</b>       | To meet present needs without compromising future ones, and to reduce and mitigate threats and hazards to human beings and the [natural] environment | To reduce uncertainty by risk assessment in order to mitigate vulnerability through risk management |
| <b>Dimension</b> |                                                                                                                                                      |                                                                                                     |
| Psychosocial     | To promote responsible environmental behaviour                                                                                                       | To encourage safety behaviours                                                                      |
| Environmental    | To use and conserve natural resources                                                                                                                | To conserve natural resources and manmade environments                                              |
| Economic         | To allocate financial resources now to avoid present and long term threats                                                                           | To allocate financial resources now in order to avoid or reduce present and medium term threats     |
| Political        | To support environmental decision making and policies and regulations                                                                                | To foster democracy                                                                                 |

Sustainability suggests that environmental threats ought to be analysed across their economic, environmental and social dimensions (UN, 1987). While one might see political processes embedded within the three pillars of sustainability it is instructive to separate out political factors as a fourth

dimension because of the key role that governments and policy makers play in advancing or limiting sustainable development. Arguably, risk analysis has not considered thoroughly the political dimension.

Current governmental decisions seem to be driven by the economic dimension. As the Sustainable Development Commission in the UK asserts: the global economy has become an overarching system „within which... Human societies, communities, ecosystems, and habitats are all seen as subsystems...(SDC, 2003, p.2)“. Such a view implies a misunderstanding of sustainable development. Within the risk analysis approach such a misconception has been discussed, and inter- as well as intragenerational consequences have been outlined (Ahearne, 2000; Okrent and Pidgeon, 2000; Belzer, 2000; Shrader-Frechette, 2000). However, new means of implementation have not been identified yet.

Part of the process of achieving more sustainable societies requires the identification of appropriate indicators to monitor change and progress. But one has to ask the question, how is it that developing countries are evaluated with same indicators as developed countries if they do not share same realities? Whose problems are taken into account to establish world priorities? According to World Trends (UN, 2002), it seems that the high standards of living that developed countries enjoy continue to have a serious and damaging effect on the global environment and impose new threats to life. It could be said that developed countries act as leaders and supervisors of environmental world trends, irrespective of their own performance or indirect environmental impact towards other countries.

Sustainable development recognises that global changes are largely caused by human action, and empowering people is a key issue. However, the psychosocial dimension has been approached with less attention and clarity than either the environmental or economic dimensions. This represents a challenge for psychologists and other social researchers who have the potential to make a significant contribution to sustainable development policies and programmes.

Theories and concepts that have been developed within the risk analysis framework might have equal applicability to the psychosocial dimension of sustainability. As an example we can cite the psychometric paradigm within risk perception (Slovic, 1987), the development of mental models (Bostrom et al, 1998), and the social amplification of risk (Kasperson, 1992). The theoretical and methodological approaches adopted within sustainable development and risk analysis are different but complementary; it may be beneficial if the lessons learnt in one research domain were tried and tested in the other. Both frameworks focus on environmental threats and the consequences of human behaviour. Gray and Wiedemann (1999), for instance, assert that sustainable development is focused on benefits (a positive perspective) and centred on social and economic systems. Likewise, risk analysis is concerned with losses (the negative side) on individuals and groups. Both frameworks are future oriented, although at different scales (see Table 1).

In summary, decisions about the future health of the planet and the research that needs to inform progress have to take into account benefits and losses, the local and global, present and future, individuals and societies, natural and manmade environments, and so on. The cross-fertilisation of concepts and approaches between sustainable development and risk analysis may improve the scientific contribution social scientists make to policy and decision making to address environmental

and social threats at all governmental levels and at different scales; it could also lead to improvements in theory and methodology developments for the benefit of the social sciences.